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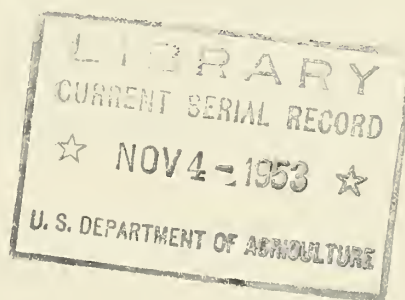
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# MARKETING ACTIVITIES



U.S. DEPARTMENT OF AGRICULTURE  
Production and Marketing Administration  
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## MARKETING ACTIVITIES

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# Poultry Market News Studied

By Dr. Edwin H. Matzen

The feasibility of initiating market news reports that would show the amount of poultry slaughtered and changes in volume of marketings is being studied by the Production and Marketing Administration, U. S. Department of Agriculture. Careful consideration is being given to determining just how such a service can best serve the needs of the poultry industry.

Research designed to develop a more complete poultry market news service as economically as possible was recommended by the Poultry Research Advisory Committee appointed by the Secretary of Agriculture under the Agricultural Marketing Act of 1946. The poultry committee and similar advisory committees for other commodities recommend research and service work for the guidance of the Department under the AMAct.

Primary consideration is being given to development of a weekly report of poultry slaughter. The livestock industry has found that weekly slaughter reports are of great value, yet comparable data are not now available to the poultry industry. By basing poultry market reports on slaughter, duplicate reporting, a problem in the past, will be avoided.

## Cooperation of Slaughter Plants Necessary

Cooperation of all plants slaughtering poultry is being sought to determine what information should be included in such a market news service. Questionnaires have been sent to the industry by W. D. Termohlen, director of the Poultry Branch, with a covering letter which reads in part as follows:

"Plans have been made to undertake, on a trial basis, market news reporting of poultry slaughtered by regions and for the country as a whole. Before such reporting is undertaken, however, we need to know which of several alternative ways of reporting quantity of birds slaughtered would be best, and for which classes of poultry the information should be reported. . .

"Requests for weekly information from plants will be made only after responses to the present survey have been studied. The success of this program will depend entirely on the extent of cooperation from individual plants. Where the plants, that are willing to cooperate, are using the Department's grading, sanitation and inspection programs, it is planned to use the licensee or the veterinary inspector, as the case may



be, to relay the information to Washington. "Plants not under these programs will be asked to cooperate by mailing the weekly reports directly to the U. S. Department of Agriculture."

In addition to asking the slaughter plants whether they would be interested in receiving a market news report on quantity of poultry slaughtered, the questionnaire also seeks their cooperation in furnishing the necessary weekly information. Other questions give the plants opportunity to indicate in which of certain ways it would be "most useful" to have a report on quantity of birds slaughtered.

#### What Information Should Be Reported?

For instance, the plants are asked if they want information on slaughter by old stock (hens and cocks), young stock, and turkeys and whether the information should be based on bird numbers, live weight, "New York" dressed weight, and/or eviscerated weight. They are asked to indicate on the same basis how information on slaughter would be available from their plant records.

Other questions cover the following points: The day of the week the plants favor for "close of business" for the purpose of the reports; whether it would be useful to report average weight of birds slaughtered; whether the report should separate old stock into hens and cocks, young stock into commercially grown broilers and fryers, and other young stock, and whether turkeys should be separated into heavy and light breeds; whether pounds of birds eviscerated should be reported according to quantity ice packed and quantity frozen; whether quantity of dressed poultry received from other plants for evisceration should be reported; and whether slaughter information should be reported for ducks and geese.

\* \* \* \* \*

#### PRIVATE FINANCING OF CCC CROP LOANS INVITED

Changes, designed to increase the participation of private lending agencies in Commodity Credit Corporation price support loans and so relieve the U. S. Treasury of as much as possible of a financial burden which would have to be taken care of through public borrowing, have been announced in the Commodity Credit Corporation's program for financing and servicing price support loans. Rates of interest to be paid by producers using the loan programs will remain at 4 percent.

Lending agencies financing and servicing CCC loans will receive an interest rate of  $2\frac{1}{2}$  percent per annum for use of their funds while invested and a fee of up to  $\frac{1}{2}$  percent per annum for services, depending upon their nature. This rate will prevail in the handling of grain and similar commodities. Agencies making cotton loans which retain their funds in the program by accepting "certificates of interest" but which forward individual notes to CCC for custody and handling will receive  $2\frac{1}{2}$  percent interest on the certificates and 8 cents per bale. "Certificates of interest," now used for cotton loans, will be offered for the first time in connection with CCC grain and other commodity loans.

# Marketing In Puerto Rico

Puerto Rico's existing marketing system restricts consumption and retards production, but improvement can be brought about through sound planning and action on a number of fronts. These are conclusions from the marketing chapter of a recently published report entitled "A Comprehensive Agricultural Program for Puerto Rico." The report, by Nathan Koenig, who is connected with the Office of the Secretary of Agriculture, represents one of the most rounded programs ever developed for revamping an entire agricultural economy.

Intended primarily for use in Puerto Rico in the development and improvement of agriculture and the local economy, the report is the result of an intensive study made jointly by the U.S. Department of Agriculture and the Commonwealth, at the request of Governor Luis Munoz Marin. Mr. Koenig directed the study, which required a little more than two years.

In addition to marketing, the report also covers such problems as credit and finance, grasslands and forestry, land and tax policies, erosion, water use and control, and farm production potentials. Because of its scope, the study should be a valuable handbook for students and workers in marketing and related agricultural fields.

## Marketing of Paramount Importance

Improvement of the marketing system and the establishment of adequate facilities for handling and utilizing farm products is of paramount importance to the development of agriculture in Puerto Rico and increasing the local food supply. The report points out that, except in the case of the island's sugar industry, the functional aspects of marketing and the organizational structure needed to serve both producers and consumers have received scant attention.

A properly functioning marketing system should draw production off farms into the various channels of use and consumption and provide the incentive for maximizing local production by furnishing facilities for complete utilization and orderly distribution of the total output. The limitations in the present Puerto Rican system, however, have not only narrowed opportunities for producers, but have deprived consumers of food and other farm commodities that economically could be produced locally.

"The farmer in Puerto Rico can no longer afford to overlook the potentialities of the local market," the report states. "While taking full advantage of available export outlets, he should also realize that needs for foodstuffs and other farm products are so great as to offer many possibilities for more effective land use and a considerable increase in



diversified production. An improved pattern of agricultural production and an efficient marketing system designed to meet the requirements of the total market - external and internal outlets - are basic to Puerto Rico's welfare. These should be focal points for orientation, education, and positive action."

The report clearly indicates that modernization of the marketing system is one of the main keys to further development of the island's agricultural economy:

"In the absence of the necessary improved marketing facilities, any talk about the need for farmers to increase their production to make more effective use of land resources and more nearly meet the requirements of the island's population becomes mere lip service."

### San Juan Market Urged

A number of measures for improving the marketing and utilization of farm products and for increasing the efficiency of distribution are proposed by the study. A central market facility in the San Juan area, planned through an earlier Production and Marketing Administration study, should be constructed without delay since existing facilities, in this principal port and main distribution center for imported and locally produced foods and other farm products, are wholly inadequate.

Private individuals and groups should be stimulated to invest in im-



"Improper handling of farm products results in spoilage and loss."

*From "A Comprehensive Agricultural Program for Puerto Rico."*





Farm to market road in the upland area.

*From "A Comprehensive Agricultural Program for Puerto Rico."*

provements or construction that will modernize and increase the efficiency of such enterprises as retail food outlets, processing plants, slaughter houses and packing plants, and provide other facilities needed for properly utilizing agricultural products and byproducts, the report states. It also stresses the need for strengthening cooperative organizations and the development of new cooperatives with able management to provide marketing and other services to farmers.

Among necessary improvements in marketing practices and methods are listed the establishment of grading and packaging standards for farm products, standardization of containers, extension of market news, crop reporting, and inspection services, and the improvement of communication and transportation facilities.

#### Specific Commodities Covered

Emphasis is placed on the importance of developing new and improved uses for Puerto Rican farm products and the establishment of an agricultural pilot plant for such development work is suggested. In terms of specific commodities, a number of suggestions are made for improving the marketing of milk, livestock and meat, sugarcane and sugar, pineapples, and tobacco.

Interestingly written and well illustrated, the report is available from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. at a cost of \$1.75 per copy.

# New International Sugar Agreement

By Donald M. Swartz

Stabilization of the world sugar market will be sought under a new international agreement scheduled to become effective January 1, 1954. Covering the trade of most of the major sugar exporting and importing countries, the new International Sugar Agreement was successfully negotiated by representatives of 50 nations during six weeks of deliberations at a United Nations sponsored conference held in London during July and August.

The agreement will come into force if, by December 15, 1953, it has been approved by governments holding 60 percent of the votes of importing countries and 75 percent of the votes of exporting countries (see table, page 10). The governments must either ratify the agreement or give notice of their intent to seek ratification at the earliest possible date before this deadline is reached.

## Long and Troubled History

World sugar trade has been marked with a long history of instability and severe price fluctuation. This has been the result of many complex factors, the most important of which has been the tendency of world market suppliers to greatly expand production with increasing prices and resist the contraction of production when prices decline, the burdens placed on sugar as a result of fiscal and tax policies designed to provide revenue and to protect domestic producing industries, and the tendency for both protected production and consumer prices to not fully respond to declining prices. As the result of the latter, as prices decline the demand for sugar declines and the full impact falls upon world "free market" exporters.

International efforts to achieve stability in the world sugar market date back to as early as 1864. Eighteen countries, including the United States, continue to be parties to an agreement signed by 23 countries in May 1937. The regulatory provisions of that agreement have not been in effect since the beginning of World War II.

Actual considerations for the new agreement got under way in 1948 with the appointment of a special committee to study the changing sugar situation and report their findings and recommendations as possible bases for a new agreement if such seemed desirable. The committee was appointed by the International Sugar Council, the administrative body under the 1937 Agreement. An initial draft of an agreement was drawn up in 1950. Considerations by this committee during 1951 and 1952 resulted in substantial revisions to the initial draft and the final draft served as a basis for negotiations at the London conference this past summer.



The general objectives of the agreement are set forth in the first article.

"The objectives of this Agreement are to assure supplies of sugar to importing countries and markets for sugar to exporting countries at equitable and stable prices; to increase the consumption of sugar throughout the world, and to maintain the purchasing power in world markets of countries or areas whose economies are largely dependent upon the production or export of sugar by providing adequate returns to producers and making it possible to maintain fair standards of labor conditions and wages."

Terms of the agreement are to be administered by an International Sugar Council composed of representatives of all participating governments. The agreement is directed toward stabilizing that part of world sugar exports, commonly referred to as the "free market," which are traded without the benefit of preferential arrangements between exporters and importers.

#### "Free Market" Quotas

The primary feature of the new agreement is the estimate of the net sugar requirements of the "free market" for each calendar year. This estimate is to be made by the Council with the benefit of reports on requirements submitted by the individual importing countries. On the basis of these estimates the Council will assign quotas to the individual exporting countries in accordance with the provisions of the agreement and on the basis of the established basic quotas (See table, page 10).

Individual exporting countries are obliged to restrict their exports to the permitted quotas and must also report to the Council any portion of their quotas which they will be unable to export. This quantity must then be redistributed to other exporters. Thus, entry into the market of the full requirements, as estimated by the Council, is practically assured. To add flexibility to the quota provisions of the Agreement the Council can set aside up to 20,000 tons of the requirements which may be allotted to individual countries to meet cases of special hardship.

#### Price Stabilization

A zone of stabilized prices with a maximum of 4.35 cents and a minimum of 3.25 cents per pound at Cuban ports is established in the agreement. The maximum and minimum limits of the zone may be modified by a special vote of the Council. Prices in the "free market" during 1952 averaged 4.16 cents and through September 1953 averaged 3.49 cents.

If market conditions so dictate, the Council is authorized to raise or lower export quotas in an effort to prevent the price of sugar from exceeding or falling below the established price zone. The Council is directed to adjust quotas within 10 days if prices are higher than the maximum or lower than the minimum for 15 consecutive market days. In case the Council cannot reach agreement on the adjustment, the agreement

Provides that the quotas in effect shall be automatically lowered by 5 percent of the basic export tonnage when prices are below the minimum and raised by  $7\frac{1}{2}$  percent when prices are above the maximum.

### Production Adjustment

As a further step toward assuring importing countries of continuous supplies at fair prices and protecting exporting countries from undue market pressures resulting from excessive stocks, the agreement provides that an exporting nation should adjust its production so that stocks held for the "free market" at a date immediately preceding the harvesting of its new crop should not be less than 10 percent of the country's basic export tonnage nor more than 20 percent of its annual production. The Council may if conditions so dictate, increase the minimum stock requirements to 15 percent of the basic export tonnage.

With the object of making sugar more freely available to consumers and thus increasing total consumption, the participating governments agree

#### Basic Export Quotas for the Free Market and Votes to Be Exercised by the Participating Governments

Exporting Countries	Basic Export Quotas (in thousands of metric tons, raw value)	Votes	Importing Countries	Votes
Australia		45	Austria	20
Belgium (including the Belgian Congo)	50	20	Canada	80
Brazil	175	50	Ceylon	30
China (Taiwan)	600	65	Federal Republic of Germany	60
Colombia	5		Greece	25
Cuba	2,250	245	Israel	20
Czechoslovakia	275	45	Japan	100
Denmark	70	20	Jordan	15
Dominican Republic	600	65	Lebanon	20
France	20	35	Norway	30
Germany, Eastern	150		Portugal	30
Haiti	45	20	Saudi Arabia	15
Hungary	40	20	Spain	20
India		30	Switzerland	45
Indonesia	250	40	United Kingdom	245
Mexico	75	25	United States	245
Netherlands	40	20	of America	
Nicaragua		16		
Peru	280	40		
Philippines	25	25		
Poland	220	40		
South Africa		20		
U. S. S. R.	200	100		
Yugoslavia	20	15		
Totals	5,390	1,000		1,000



to take whatever action they deem appropriate toward reducing the burdens on sugar resulting from fiscal or tax policies and other forms of control either public or private. In addition, the Council is directed to undertake studies of matters such as the effects of taxation and restrictive measures as well as economic and other conditions on the consumption of sugar in the various countries, the means of promoting consumption particularly in countries where consumption is low, and the progress of research into new uses of sugar, its byproducts and the plants from which it is derived.

### "Free Market" Exemptions

Exports of sugar to the United States will not be considered as exports to the "free market" under the agreement and are thus not chargeable to the world quotas of the exporting countries. Likewise movements of sugar between Belgium, Luxemburg, France, Netherlands and the Federal Republic of Germany and exports by the British Commonwealth exporting countries are excluded. The movement among the above named European countries is limited to a net amount of 175,000 tons annually and the excluded exports of the British Commonwealth exporters are limited to the quantities established in the Commonwealth Sugar Agreement of 1951.

\* \* \* \* \*

### FARM OPPORTUNITIES IN FLOWERS AND PLANTS

Advantages and disadvantages of growing flowers and ornamental plants as a sideline on farms are discussed in an article in the current, October, issue of "The Agricultural Situation," published by the Bureau of Agricultural Economics, U. S. Department of Agriculture.

Separating the crops into two industries, floriculture - cut flowers, cut foliage and foliage plants used mainly for indoor decoration or personal adornment - and ornamental horticulture - herbaceous and woody plants for planting outdoors, the author, Truman Fossum of BAE, sees some "risky" opportunities for farm production of the former, but is more optimistic about the latter. Those present at the annual meeting of the Atlantic States Division, National Association of Marketing Officials, here last spring will recall Mr. Fossum's interesting discussion of possibilities of a market news service for cut flowers.

Heavy investments, \$100,000 per covered acre and 5 to 15 cents per square foot each year for fuel, rule out greenhouses for most farmers. However, perennial herbaceous plants have proven to be good farm sidelines and choice and unusual woody plants also may present opportunities. In conclusion, the article reads:

"Trends in the floriculture and ornamental horticulture industries indicate that in the foreseeable future, opportunities in the growing of flowers and ornamental plants will be equalled proportionately, by those in only a few other industries. This assumes, of course, that improvements in marketing keep pace with the increased quantities and varieties grown."

# + Cigarette Consumption Trends x

✓  
By Stephen E. Wrather

The roots of the tobacco industry go deep into the past of colonial America. Tobacco was the first major commodity produced in the colonies, and throughout our history it has been closely associated with the political and economic development of our country.

One of our major export commodities, tobacco has traveled a rough road. Currently, however, with a continuing increase in domestic usage, the future is relatively bright. Today, it is accepted almost universally as one of the amenities of existence -- almost a necessity. To the average person, tobacco provides a solace, but for many thousands of our citizens it furnishes a livelihood.

There are roughly 850,000 farm families in the United States and Puerto Rico engaged in its production, on an average of about 2 acres of tobacco for each of these families. With farm prices running at about 50 cents a pound, and a yield of 1,250 pounds to the acre, the gross return to the average farm family is in the neighborhood of \$1,200 or \$1,300. But, it is well earned money since the crop is the least mechanized of any major farm commodity and requires heavy investments in labor, fertilizer and equipment.

Cigarettes are by far the most important tobacco product viewed from volume of sales. Several important factors are favorably affecting the trend in cigarette consumption and indications are that they will continue to do so in the foreseeable future.

Level of "spendable," or disposable personal, income is one of these salient factors, and during the first half of 1953 it reached an all-time high. A sharp increase in cigarette consumption occurred between 1950 and 1952, a period of rising spendable income -- both in terms of "current" income and in terms of what such income would buy. During periods of relatively low incomes, year-to-year fluctuations in cigarette consumption appear to follow the trend in such incomes, as was especially evident in the early 1930's. In the past decade, however, with a relatively high spendable income level, total cigarette consumption has continued to climb despite some ups-and-downs in level of spendable income adjusted for consumer price trends. It appears that with a low level of employment and relatively low income, cigarette consumption tends to follow the trend in such income. But, with full employment and high consumer purchasing power, cigarette consumption is not greatly affected by minor fluctuations in income.

There is additional evidence of this in the comparison of per capita



"real" income figures with per capita consumption of cigarettes over the past ten years or so. Per capita "real" income - income adjusted for changes in the consumer price level - reached a peak of \$1,607 in 1944, declined to \$1,403 in 1949, and turned upward to \$1,501 in 1952. (These figures are adjusted to the consumer price level for January-June 1953.) On the other hand, per capita consumption of cigarettes by U. S. Nationals over 15 years of age totaled only 2,852 in 1944, held fairly steady at around 3,250 for a number of years, but jumped to 3,573 in 1951 and to 3,719 in 1952.

During the 1952 fiscal year, tobacco taxes brought to the Federal and State Governments more than 2 billion dollars - nearly four times as much as the average for the years 1935-39. In contrast, U. S. tobacco growers received 1.1 billion dollars in cash receipts from 1952 marketings.

Probably the most significant factor in increased cigarette consumption has been our population growth, bringing with it a steady gain in the number of potential smokers. In July 1953 there were 113 million persons 15 years or older in the United States, a gain of 14 million since 1940 in the age bracket referred to as potential smokers. With about 72 percent of the population in the 15-or-over age group now, on the basis of population projections for 1960, there should be roughly 125 million potential smokers by then. This would be an increase at the rate of over a million persons a year. The rapid widening of this potential smoker base is a factor of utmost importance to the trend in cigarette consumption over the long term, as well as for the near future.

Trade sources estimate the number of actual cigarette smokers in the United States at about 60 million - 65 to 70 percent of the adult males and about 35 percent of the women - but there are no official figures.

Of interest is the apparent fact that "king-size" cigarettes are not having the adverse affect on total cigarette consumption that was expected. It has been estimated that "king-size" cigarettes accounted for 18 percent of total production in 1952, as compared with only 7 percent in 1940 and 12 percent in 1951. With about 15 percent more tobacco than is used in the standard-sized smoke, it appeared reasonable to assume that "king-size" cigarettes would cut down on the number smoked per day. There appears no justification for this, however, on the basis of the per-capita consumption figures cited above. People seem to be buying just as many cigarettes. Apparently, they aren't smoking them as short.

For the foreseeable future a continued increase in total cigarette consumption appears indicated; probably not at the annual rate of increase which averaged 6 percent from 1942-52, but at a significant level. There are several reasons for this: (1) The number of potential smokers is increasing at a substantial rate; (2) there is room for growth in the percentage of potential smokers actually using cigarettes; (3) with prospective full employment and a high level of spendable income consumers should have ample funds to buy cigarettes; (4) tensions created by disturbing and unsettled world conditions act to increase smoking; and (5) the increasing percentage of population in urban areas should contribute to the upward trend in cigarette sales.

# Keeping Bread Fresh

By Philip Talbott

What might be considered normal temperature - the range from 100 degrees Fahrenheit to freezing - is the worst enemy of fresh bread. Sounds strange, but intensive research has proved it. High temperatures, above 100 degrees F., will retard the staling of fresh baked bread. Freezing completely halts it. In the temperature range from 100 degrees F. down to freezing the rate of bread staling rises steadily as the temperature falls.

The staling of bread, one of the major problems of the baking industry, has been the target of research for decades. The basic reasons why bread becomes firm and loses its flavor are still unknown. But progress has been made in retarding bread deterioration and further research probably will develop the rest of the answers. The effect of temperature on fresh bread, not only on the rate at which it hardens but also on the rate of deterioration even when it remains soft, has been observed by various students of the subject. However, precise measurements of the effects of different temperatures were needed, and, for practical application, more knowledge was needed of the effects of temperature changes during the handling and delivery of bread under ordinary commercial conditions.

## Research History

In 1948, research work on a wide variety of marketing problems was getting well started under the terms of the Agricultural Marketing Act of 1946. In that year, the U. S. Department of Agriculture effected a contract with the American Institute of Baking, a leading research agency in the industry, providing for a new and broad-scale attack by the Institute on the problems of bread staling. That attack followed, generally, these broad avenues:

1. The literature on bread staling was reviewed to bring to bear on the subject the experiences, experiments, and thinking of previous years.

2. The effects of different temperatures on bread during delivery from bakery to retailers were measured.

3. Bread components and factors which were known to have an effect on staling, such as temperature, humidity, and wheat flour starch and protein, were tested in varying degrees and quantities in bread to measure their effects in hastening or slowing the staling process.



4. The components of bread were studied in a search for the specific causes of bread staling.

5. Methods and equipment for measuring the rate at which bread stales were tested and improved.

### Studies of Bread Handling and Delivery

In one phase of the research study, bread was loaded in trucks at the bakery in the usual way, and recording thermometers were used to learn the variations in temperatures of the loaves from the time of loading to the time the bread was dropped off at the retail stores. It was found that in cold weather, the temperature of the bread in the trucks usually had fallen to levels that caused considerable staling even before the driver started on his route, and that further cooling, with its accompanying more rapid staling, took place during delivery. Bread was left in "drop boxes" at many stores, where it cooled further.

It was determined that bread which had staled considerably during this cooling period did not regain its freshness when heated, but continued to stale at a slower rate. Raising the temperature of bread in the retail store therefore does not restore freshness.

The effects of insulating trucks and of packing bread in cartons before loading were measured, and these practices were found to retard the staling process.

It was found that most bakers permit the bread as it exits from the oven to cool to 85 to 105 degrees so it will slice well, then slice it, wrap it, and load it on trucks under a wide variety of conditions and temperatures. To retard the rapid staling which develops with a decline in temperature of bread, the Institute suggested:

1. Heated loading docks for trucks should be provided.
2. A heated space should be provided for parking the loaded trucks until they are started on their delivery routes.
3. Truck bodies should be insulated to retain heat in the bread and thus retard staling; and cartoning of the bread also helps to sustain the temperature and retard staling.
4. The custom of leaving bread in drop boxes at retail stores, where the commodity is subject to rapid chilling and therefore rapid staling, should be eliminated in favor of some delivery method which does not subject bread to such rapid cooling.

(This phase of the study was covered in more detail in an article, "Keep That Bread Hot," in the June 1952 issue of "Marketing Activities.")

### Laboratory Studies of Effects of Temperature and Humidity on Bread

A special cabinet was constructed by the Institute in which bread

could be stored at different temperatures and humidities. Samples of bread were stored and the rates of staling compared under different combinations of temperature and humidity.

The experiments confirmed the findings of research workers in previous years that frozen bread remains fresh indefinitely; that bread stored at relatively high temperatures of 100 degrees F. and above remains soft indefinitely but may, upon prolonged storage, develop mold and off-flavor; and that staling grows steadily more rapid as the temperature is reduced from 100 degrees to the freezing point. It was confirmed also that staling takes place most rapidly during the first 12 to 18 hours after the bread is baked.

As a result of these experiments, these recommendations were offered for storage of bread in groceries, restaurants, and homes:

1. Bread should be stored at a temperature of 70 to 90 degrees F., because in this temperature range staling is relatively slow.

2. If bread is to be stored for relatively long periods, it should be frozen. Frozen bread does not stale and does not spoil.

3. If mold growth is a problem, it may be partially controlled by storing at ordinary refrigerator temperatures of 40 to 50 degrees F.; but at these temperatures, bread firms rapidly.

4. If a crisp crust is desired, bread should be stored at a low relative humidity. At 80 degrees F., the recommended relative humidity is 80 percent; but under such conditions there is a rapid drying of the crumb inside the crust, and a loss of palatability.

#### Physical, Chemical, and Methodological Studies

Previous experiments had indicated that starch is the component of bread chiefly responsible for staling. In this study, bread was baked from reconstituted flour made of wheat gluten and several types of starches. It was found that breads made from wheat gluten with potato starch or with corn starch became very stale within 24 hours, indicating that the starch content was the important factor in the staling process.

The Institute perfected a method by which flour can be separated into gluten, prime wheat starch, small-granule wheat starch, and solubles, permitting the reconstitution of flour with varying proportions of the different components. When bread was baked from reconstituted flour containing 20 percent protein and large-granule wheat starch, it was found to stale much more slowly than bread made from flour with lower protein content.

Considerable work was done to develop an accurate method of measuring the rate at which bread stales. Mechanical devices to measure the rate of firming were tested, including the Baker compressimeter and the Bloom gelometer. A new device was developed, called the precision penetrometer, which has a simpler design and which gives results more rapidly than the

other devices examined. The penetrometer measures the hardening of bread by measuring the degree of penetration of a plunger into a slice of bread, giving a result roughly comparable to, but far more accurate than, the housewife's usual test made by squeezing a loaf of bread to determine its softness. The results obtained with the penetrometer were found to be in general accord with the findings of a panel of persons who judged the staleness of samples of bread by taste tests.

(More detail on this phase of the research was contained in an article, "More Protein Stalls Staling," in the September 1952 issue of "Marketing Activities.")

The Institute is continuing its studies, under contract with the Department, centering attention on the chemical make-up of the components of bread and the relation of each component to staling. Both starch and protein of bread are being analyzed to learn, if possible, exactly what components cause staling and what might be done to retard or prevent it.

Meanwhile, some baking companies are testing out, on a commercial scale and in their regular operations, the practice of immediately freezing bread in large quantities and making deliveries from the frozen supply. Practical problems of storage space, costs, and general economic feasibility of the practice are involved.

## Marketing Briefs

(The program announcements summarized below are more completely covered in press releases which may be obtained on request from the Office of Information, U. S. Department of Agriculture, Washington 25, D. C. by citing the code number given at the end of each item.)

Cotton.--A national marketing quota of 10 million bales and a national acreage allotment of 17,910,448 acres for the 1954 crop of UPLAND COTTON have been announced by the Secretary of Agriculture. (USDA 2505-53) At the same time the Secretary proclaimed a national marketing quota of 30,000 bales and an acreage allotment of 41,261 acres for the 1954 crop of LONG STAPLE COTTON (USDA 2504-53). Both quotas are subject to a grower referendum to be held December 15... Under certain conditions and in certain areas Commodity Credit Corporation price support loans will be made on cotton in the open in the custody of warehousemen. (USDA 2449-53)

Dairy.--Donations of BUTTER, nonfat DRY MILK, and CHEESE acquired by CCC under price support operations to private welfare organizations for foreign relief work totaled more than 110 million pounds as of October 14. (USDA 252-53). Earlier, announcement was made that USDA had donated 50 million pounds of CHEDDAR CHEESE to U.S. private welfare agencies for domestic and foreign use. (2443-53)... Purchases totaling 236,500 cases



of EVAPORATED MILK for export by the Foreign Operations Administration were announced: 200,000 cases on October 6 (USDA 2441-53) and 36,500 cases on October 12 (USDA 2509-53). On October 12, USDA also offered to purchase 2,500,000 pounds of PROCESSED CHEDDAR CHEESE for FOA export. (USDA 2509-53)... Action was taken during the past month on the following milk marketing orders:

NEW YORK (USDA 2463-53 and 2461-53); CINCINNATI (USDA 2474-53 and 2302-53); WICHITA, Kan. (USDA 2327-53 and 2293-53); SIOUX CITY, Ia. (USDA 2519-53); MINNEAPOLIS-ST. PAUL (USDA 2471-53); MEMPHIS (USDA 2469-53); CHICAGO (USDA 2429-53); NEOSHO VALLEY (USDA 2427-53); OKLAHOMA CITY (USDA 2389-53); PUGET SOUND (USDA 2357-53); FIVE NEW ENGLAND orders (Boston, Fall River, Lowell-Lawrence, Springfield, and Worcester) (USDA 2279-53); and STARK COUNTY, Ohio (USDA 2267-53).

Fruits and Vegetables.--USDA offers to purchase have been announced for HONEY (USDA 2441-53 and 2475-53); DRIED PRUNES (USDA 2444-53); and CANNED TOMATOES and TOMATO PASTE (USDA 2281-53)... U. S. Grade Standards have been proposed for CHILI SAUCE (USDA 2272-53); revised for EGGPLANT (USDA 2347-53), Sawdust Pack GRAPES (USDA 2273-53), and CUCUMBERS (USDA 2507-53), and proposed revised standards have been announced for CUCUMBER PICKLES (USDA 2485-53)... Action was taken on the following export programs: HONEY export payments reduced from 4 to 3.6 cents a pounds (USDA 2359-53), Fresh PEARS, export payment set at \$1.00 per box (USDA 2354-53) and CCC has been named as an exporter under the RAISIN export program. (USDA 2311-53)... Action taken on these marketing agreement and order programs: RAISIN (USDA 2473-53); NAVEL ORANGE (USDA 2271-53) and 2492-53); WALNUT (USDA 2436-53 and 2319-53); and FILBERT (USDA 2337-53.)

Fats and Oils.--Price support at not less than \$63.38 per ton for 1953-crop TUNG NUTS and OIL has been announced.. (USDA 2421-53)... USDA has announced marketing quotas and acreage allotments for the 1954 crop of PEANUTS (USDA 2411-53)... The Commodity Exchange Commission has proposed an increase in daily trading limits on SOYBEANS. (USDA 2306-53).

Grain, Hay, and Seeds.--USDA's CORN and WHEAT ADVISORY COMMITTEES MET in a joint two-day session in Chicago, October 13-14, to discuss price support and marketing problems. (USDA 2407-53)... Final results of the WHEAT marketing quota referendum showed that 87.2 percent of the growers voting favored the program. (USDA 2316-53)... Minimum price support of \$2.20 per bushel, national average, has been set for 1954-crop WHEAT. (USDA 2476-53)... USDA has announced that storage payments will be made to farmers who redeem 1952-crop resealed WHEAT, CORN, and OATS during the 1953-54 reseal period. (USDA 2489-53)... USDA has announced that farmers who seed between 90 and 100 percent of their 1954 farm WHEAT acreage allotment will not be penalized for such underseeding in establishment of future farm allotments which may be required under existing law. (USDA 2385-53)... Price support level for 1953-crop CORN has been set at \$1.60 per bushel, national average price. (USDA 2437-53)... Acceptance of applications in the USDA program guaranteeing occupancy in new commercial grain storage facilities has been announced. (USDA 2486-53 and 2512-53). Attention of farmers has been called to the new "quick" tax amortization available for builders of new grain storage facilities. (USDA 2395-53).



USDA has offered to buy RICE (USDA 2454-53) and DRY BEANS (USDA 2462-53) for the Foreign Operations Administration and an additional quantity of DRY BEANS for the School Lunch Program. (USDA 2422-53)... CCC is offering certain stocks of HAY and PASTURE and WINTER COVER CROP SEEDS for export sale on a negotiated price basis. (USDA 2415-53).

Livestock and Meats.--A preliminary report on a study of the spread between prices received by farmers for cattle and the retail cost of beef has been made by Secretary of Agriculture Ezra Taft Benson. He said that preliminary findings indicate that margins between Choice grade beef and cattle are somewhat wider now than several years ago, before Korea, but apparently have not widened further during the last year and a half of sharpest decline in cattle prices. Still to be considered in more detail is the trends in margins for lower grades, made up of cattle marketed off grass and of cows, which have undergone the greatest decline. (USDA 2506-53). The study of the spread between farm cattle prices and the retail cost of beef was ordered by the Secretary on September 25. It is being made by the Bureau of Agricultural Economics and other USDA agencies. (USDA 2365-53). On the same date, the Secretary conferred with President Eisenhower, the Secretary of the Treasury and the Director of the Foreign Operations Administration regarding measures to be put into effect, as soon as possible, for procurement of beef and other surplus farm commodities for export under the Mutual Security Act. At the same time, Secretary Benson said that livestock and meat industry advisory groups, which had met with USDA, foresaw that Government purchases were strengthening cattle markets. (USDA 2361-53). The meeting of the industry group was announced on September 18. (USDA 2299-53). Through October 5, USDA had purchased a total of 130,675,300 pounds of meat products. (USDA 2484-53) and had announced purchase of 3,522,000 pounds of carcass mutton and beef for FOA export to Greece. (USDA 2515-53)...Norway has been declared free of foot-and-mouth disease. (USDA 2392-53). Under its drought emergency program, USDA announced the following actions: Delegated State USDA Drought Emergency Committees more authority (USDA 2312-53), and announced changes in the drought disaster area in KANSAS (USDA 2277-53 and 2433-53) NEW MEXICO (USDA 2408-53), VIRGINIA (USDA 2386-53), TENNESSEE (USDA 2308-53) and KENTUCKY, MISSISSIPPI, and NORTH CAROLINA (USDA 2288-53).

Sugar.--Increase of 100,000 tons in 1953 sugar quotas, bringing the total for the year to 8,100,000 short tons, raw value, was announced. (USDA 2526-53). A deficit of 100,000 short tons in the Philippine Republic sugar quota has been prorated to other supply areas (USDA 2321-53). Minimum wage rates for Louisiana sugarcane field workers have been announced. (USDA 2325-53). Hearings have been scheduled on 1954 sugarcane wages and prices in Puerto Rico and the Virgin Islands. (USDA 2373-53). CCC has purchased 46,000 short tons of sugar for shipment to Iran under an FOA program. (USDA 2412-53).

Tobacco.--Average price-support loan levels for 1953-crop BURLEY, MARYLAND, FIRE-CURED, DARK AIR-CURED, VIRGINIA SUN-CURED, PUERTO RICAN CIGAR FILLER, and CIGAR FILLER and BINDER types of tobacco have been announced by CCC. (USDA 2423-53). Marketing quotas have been announced and referendums set for October 29 on several types of tobacco. (USDA 2466-53, 2465-53, and 2458-53).

## ABOUT MARKETING

The following addresses and publications, issued recently, may be obtained upon request. To order, check on this page the publications desired, detach and mail to the Production and Marketing Administration, U. S. Department of Agriculture, Washington 25, D. C.

### Publications:

Grain Marketing Facilities in the Piedmont Area of North Carolina, June 1953. 46 pp. (USDA in cooperation with North Carolina Dept. of Agriculture and the N. C. State College of Agriculture and Engineering) (Processed)

Feeding Molasses to Livestock. June 1953. 13 pp. (PMA) (Processed)

Detergents, Emulsifiers, and Emulsion Products as Market Outlets for Fats and Oils. Marketing Research Report No. 46. June 1953. 31 pp. (PMA) (Printed)

Candling, Sizing, Packing, and Materials-Handling Equipment and Methods Used in Egg Assembly Plants. MRR No. 47. June 1953. 80 pp. (PMA) (Printed)

Improving the Performance of Retail Food Store Cashiers Through Better Training. MRR No. 48. June 1953. 45 pp. (PMA) (Printed)

Apple Handling Methods and Equipment in Pacific Northwest Packing and Storage Houses. MRR No. 49. June 1953. 302 pp. (PMA) (Printed)

Cotton Handling Guide for Warehouse Managers and Foremen. MRR No. 50. June 1953. 78 pp. (PMA) (Printed)

Marketing Liquid Sugar. MRR No. 52. June 1953. 76 pp. (PMA) (Printed)

The Establishment of Central Market Butter Prices in Chicago and New York. MRR No. 53. June 1953. 86 pp. (PMA) (Printed)

Market News Offices (Location, Commodities, Officials in Charge) August 1953. 11 pp. (PMA) (Processed)

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